## Remarks

*Status of the Claims*

Claims 1-8, 10-13 and 15-40 are pending in the present application. Applicants add new claim 41 which is a combination of previously objected to claim 28 and those claims which it depended therefrom. In addition, previously objected to claim 28 is cancelled in light of the addition of new claim 41.

*Allowable Subject Matter*

The Examiner's indication of allowable subject matter with respect to claims 10-13 and the indication that claim 28 would be allowable if amended to recite the limitations of its base claim are noted with appreciation. Applicants submit that new claim 41 is allowable because it recites the limitations of claim 28 and the claims from which it depended.

*Rejection under 35 U.S.C. § 102(b)*

Claims 1-4, 7, 15, 16, 18-20, 22, 23, 29, 30, 32, 33-37, 39, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 6,262,550 to Kliman et al. ("Kliman '550"). Applicants submit for the reasons advanced below, Kliman '550 fails to teach each element recited in the pending claims.

Kliman '550 discloses a method for capturing, storing and analyzing signals and data from a variety of sensors for the purpose of maintenance and condition monitoring of electric motors. A variety of sensors are mentioned, including temperature, vibration, flux, sound, images, profilometer, position, RF and others.

In the references to radio frequency measurements within Kliman '550, said measurements are mentioned only in very general terms. Importantly, there is no mention of processing RF signals to derive *operating parameters* such as speed, load, torque, modulation, out of balance, quality of brushes etc. (i.e., operational parameters of the electric motor). Since Kliman '550 fails to teach using RF signals to determine operating parameters, Applicants submit that claims 1 and 15 are patentable with respect to the reference.

In contrast, with respect to independent claims 1 and 15 and those that depend therefrom, determining operational parameters of an engine motor is a specific, and explicit, limitation.

In part, claim 1 recites a "processor *processing the radio-frequency signals* generated by the *arcing events* in the electric motor so as to determine *one or more operational parameters* of the electric motor." Similarly, claim 15 recites, "*processing the radio-frequency signals* generated *by the arcing events* in the electric motor so as to determine *one or more operational parameters* of the electric motor." While Kliman '550 makes mention of the load and torque produced by a motor (see column 3, lines 25 to 28), this is again made in very general terms and in any case does not state that such determination operational parameters of an electric motor is based on the measurement of RF signals.

In further support of the above assertion, the only processed data and results disclosed in Kliman '550 are those presented in Figures 6 and 7. These relate specifically to flux and current measurements (respectively) and not RF signal measurements. As a result, it is clear that Kliman '550 simply fails to teach the RF signal processing elements claimed.

For all of these reasons, Kliman '550 cannot therefore be said to provide an enabling disclosure of processing radio frequency signals generated by the arcing events to determine one or more operational parameters of the electric motor, and as such does not anticipate claim independent claim 1 or claim 15.

At least for the above reasons, Kliman '550 fail to anticipate or render obvious the subject matter of independent claims 1 and 15. Since the independent claims are patentable with respect to Kliman '550 and all of the elements recited in the claims are not found in the prior art of record, Applicants submit that claims 1-8, 10-13 and 15-40 should be passed to allowance.

*Rejections under 35 U.S.C. § 103(a)*

Various claims also stand rejected in light combinations of the following references: Kliman '550, United States Patent No. 6,236,227 in the name Kliman et al. (Kliman '227); United States Patent No. 5,461,329 in the name Linehan et al. ("Linehan"); and United States Patent No. 6,434,512 in the name Discenzo ("Discenzo")

As stated above, contrary to the Examiner's objections, Kliman '550 does not anticipate the subject matter of claim 1, specifically because it does not enable the skilled person to process radio frequency signals generated by the arcing events to determine one or more operational parameters of the electric motor.

Should the skilled person be moved to consider the teachings of Kliman '227 to Discenzo in the hope of overcoming the deficiencies in Kliman '550 and arriving at the claimed invention, he would not be able to do so for the reasons that follow. Kliman '227 makes use of impedance measurement (resistance, inductance and capacitance) to assess the condition of electric motors. It does not disclose, explicitly or otherwise, the processing of RF signals generated by the arcing events to assess the condition of electric rotating machines.

Furthermore, Kliman '227 actually explicitly suggests the removal of harmonics and frequency deviations before making such measurements (see column 1, lines 60 to 65). It will be appreciated that harmonics and frequency deviations are the kinds of measurement that are used in the instant invention to assess the condition of the motor.

The combination of Kliman '550 and Kliman '227 therefore does not enable the skilled person to process radio frequency signals generated by the arcing events to determine one or more operational parameters of the electric motor.

In turn, Linehan uses current transformers, rather than an RF antenna, to acquire the motor current signal (see, for example, column 6, lines 38 to 40). This time domain data is converted to the frequency domain and subsequently analyzed. Thus, Linehan describes therein a signal processing technique that extracts data about the condition of a motor, making use of the motor current signal, not an RF signal.

Accordingly, the combination of Kliman '550 and Linehan (and of Kliman '550, Kliman '227 and Linehan for that matter) still does not enable the skilled person to process radio frequency signals generated by the arcing events to determine one or more operational parameters of the electric motor.

Further, Discenzo discloses a method for collecting data and predicting the development of faults in electric motors. However, despite describing virtually all other types of relevant sensors, Discenzo is silent as to the use of RF sensors (other than as a communication method – see column 12, lines 29 to 37 – similar to that which was successfully overcome in our previously filed pre-appeal brief).

Accordingly, the combination of Kliman '550 and Discenzo (and of Kliman '550, Discenzo, Kliman '227 and/or Linehan for that matter) still does not enable the skilled person to process radio frequency signals generated by the arcing events to determine one or more operational parameters of the electric motor.

## Conclusion

The rejection of the claims rests on a misunderstanding of the teachings of the references and a misapplication of the law of anticipation to the claimed invention. That is, the prior art of record does not teach or suggest the features claimed. The rejection of the claims therefore should be withdrawn.

Accordingly, Applicants request immediate allowance of the claims. If a telephone conversation would expedite prosecution, please contact the undersigned attorney.

Respectfully submitted,

Date: April 16, 2009
Reg. No. 54,089

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BOS-1289873 v4